

BARRIER ELEMENT

DT04 Rec'd PCT/PTO 15 OCT 2004

The invention relates to a barrier element for bounding a carriageway, comprising a guide element extending along a longitudinal axis, which guide element transversely to the longitudinal axis has on the underside a foot part, which on the first end of the guide element is provided with a base plate, which base plate is provided with parts of a tenon and mortise connecting system as the first connecting means for connecting the barrier element to a second barrier element, which is provided with parts of a tenon and mortise system as the second connecting means, which interact with the first connecting means. Such a barrier element is known from Dutch Patent Application 1006481.

In the case of the known barrier element tenons can be fitted on the base plate as the first connecting means, which can be connected to a base plate provided with mortises so as to form a joint, which base plate forms the second connecting means in a second barrier element which can be connected to the first barrier element. Of course, other combinations and configurations of tenons and mortises are conceivable, as is known from Patent Application 1006481. For the sake of completeness, the full content of this application is deemed by this reference to it to be incorporated in the present description.

It is also known from the abovementioned application to pre-connect several, for example two, barrier elements to form an assembly, in which case use is made of a different connecting system comprising connecting plates and mounting bolts.

It is desirable, after a barrier element or an assembly of barrier elements has been placed on a road surface, to fix said barrier element or assembly of barrier elements relative to the road surface, in order to prevent slipping or tilting if a road vehicle crashes against the barrier element(s).

It is an object of the invention to provide a barrier element that can be fixed easily relative to the road surface.

It is another object of the invention to provide a barrier element which, as part of an assembly of barrier elements, can be fixed easily relative to the road surface.

It is yet a further object of the invention to provide a barrier element that with few modifications compared with the known barrier elements is suitable for fixing relative to the road surface.

One or more of these objects is achieved with a barrier element that according to the invention is characterized in that on the first end the barrier element is provided with fixing means for accommodating a fixing element for fixing the barrier element relative to the carriageway.

5 The first end of the guide element, which is provided with the parts for the tenon and mortise connecting system, after positioning of the barrier element is also easily and directly accessible for the fitting of fixing elements after the barrier element has been placed in position. That is also the case if several barrier elements have been combined to form an assembly, for example by using connecting plates and mounting
10 bolts. In that case the first end will be easily and directly accessible even after placing of the assembly. The fitting of the fixing means will consequently add little to the positioning time. Another advantage achieved is that no fitting hatches are necessary in order to reach the interior of the barrier element. A further advantage achieved is that, after the barrier elements have been positioned and connected, the fixing means are
15 shielded by the guide element and do not form any projecting parts that could cause injuries to persons or damage to road vehicles when accidents occur.

Rivets, clamps or screws, which are driven into the road surface, can be used as the fixing elements.

A preferred embodiment of the barrier element according to the invention is
20 characterized in that the fixing means are fitted in the interior of the barrier element. This has the advantage that there is great freedom in the type of fixing means and the way in which said fixing means are fixed on the barrier element, preferably with the guide element.

A preferred embodiment of a barrier element according to the invention is
25 characterized in that the fixing means comprise a base plate that is provided with feed-through holes. In this embodiment the base plate, which has already been fitted as part of the tenon and mortise connecting system, is also used as a fixing means. As a result, few or no additional parts need be placed in the barrier element. Apart from the abovementioned elements, hook-shaped or strip-shaped elements that interact with the
30 base plate can also be used as the fixing elements. Moreover, it is conceivable to fit an fixing plate as the fixing means if the base plate is not suitable for this purpose.

A further embodiment of the barrier element according to the invention is characterized in that the fixing means comprise a feed-through bush accommodated

between the base plate and the foot part. The feed-through bush connects the base plate to the foot part and thereby forms a rigid construction. This makes it possible to achieve a more stable fixing in the barrier element relative to the road surface.

5 A further embodiment of a barrier element according to the invention is characterized in that the fixing means are fitted near the guide element.

Fitting the fixing means on or near the guide element ensures that the fixed barrier element can absorb a great force if a road vehicle crashes against it. If the fixing means comprise a plate, the holes are preferably made in the plate or base plate near the tenons and/or mortises of the tenon and mortise system. For the sake of stability, the
10 holes are preferably made with as great spacing between them as is practically possible.

The invention will be explained below with reference to a drawing of a non-limiting exemplary embodiment. In the drawing:

Fig. 1 shows an assembly of two barrier elements;

Fig. 2 shows a view of one end of a barrier element according to the prior art;

15 Fig. 3 shows a view of one end of a barrier element according to the invention.

In Fig. 1 reference numeral 1 shows a first barrier element according to the prior art, and reference numeral 2 shows a second barrier element in which the invention is embodied. The barrier elements 1 and 2 are connected to each other in the known manner at position A by means of connecting plates 3 and 4 (shown by dotted lines)
20 and fixing bolts 5. The pre-connection of barrier elements to form an assembly is carried out in order to make bends and to simplify the replacement of a damaged barrier element.

The assembly of two barrier elements has, for example, an overall length of 12 metres and a weight of approximately 1,000 - 1,500 kg; the height of the assembly is
25 approximately 80 cm, and the width of the foot is approximately 54 cm. These values are purely indicative and are not limiting.

Barrier element 1 has on its right-hand free end (viewed in the drawing) on the inside a first plate 6, which is provided with holes 7 and 8 positioned in a row in the longitudinal direction.

30 A second plate 9 is fitted on the free end in the bottom of the barrier element 1, on which second plate four tenons are fixed, two of which tenons 10 and 11 are shown. The four tenons are preferably fitted on the corner points of a rectangle.

Barrier element 2 has two tenons 12 and 13 at the top on its left-hand free end (viewed in the drawing). A plate 14 with six holes, two of which holes 15 and 16 are shown, is fitted near the foot. Four of these holes are preferably fitted on the corner points of a rectangle.

5 A road can be fenced off by connecting the right-hand part of the assembly to the left-hand part of a second assembly of two or more barrier elements or to a single barrier element, as show in Figure 1.

Fig. 2 shows, for the sake of clarity, the view of the free end of the barrier element 1. The first plate 6 with the holes 7 and 8 positioned in a row in it is fitted at
10 the top. The second plate 9 with tenons 11 (see Fig. 1) and 17 on it is fitted on the foot end.

Fig. 3 shows the view of the free end of barrier element 2. Tenon 12 is visible again in the top of it. The plate 14 with the holes 15, 16 (see Fig. 1) positioned in a row and the holes 18, 19 positioned in a row in it is fitted on the foot end.

15 According to one embodiment of the invention, the plate 14, which is the base plate here, is also provided with two holes 20 and 21. Bushes 22 and 23, which are connected to the flanged bottom edges 24 and 25 of the guide element 26 of the barrier element, are provided below the holes. A bolt, nail, rivet or other suitable fixing means is passed through the holes 20, 21, bushes 22, 23 and holes in the flanged bottom edge
20 24 and 25 and is anchored in the road surface. The fixing is preferably carried out before another barrier element or assembly of barrier elements is connected to the free end with the tenon and mortise connecting system.

With the invention it is advantageously possible for the existing base plate also to be used to fix a base element relative to the carriageway.